

R.M.E. MODEL 45

TRADE NAME	RME Model 45
MANUFACTURER	Radio Manufacturing Engineers, Inc., Peoria (6), Ill.
TYPE SET	AC Operated Multiband Communications Superheterodyne Receiver
TUBES (NINE)	Types, 7B7 RF Amp., 7J7 Converter, (2) 7B7 1st & 2nd IF Amp., 7B6 Det.-BFO, 7C7 AF Amp., 7A6 Noise Limiter, 7C5 Power Output, 80 Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	1.53 Amp. @ 117 Volts AC
TUNING RANGES - BROADCAST	Band 1 - .540-1.6 MC, Band 2 - 1.6-2.9 MC, Band 3 - 2.9-5.4 MC, Band 4 - 5.4-9.8 MC, Band 5 - 9.8-18 MC, Band 6 - 18-33 MC.

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."

"Reproduction or use, without express permission, of editorial or pictorial con-

tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1947 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		RME PART No.	STANDARD REPLACEMENT		
1	RF Amp.	7B7	7B7	8AR	
2	Converter	7J7	7J7	8AK	
3	1st IF Amp.	7B7	7B7	8V	
4	2nd IF Amp.	7B7	7B7	8V	
5	Det.-Beat Osc.	7B6	7B6	8W	
6	1st AF Amp.	7C7	7C7	8V	
7	Noise Limiter	7A6	7A6	7AJ	
8	Power Output	7C5	7C5	6AA	
9	Rectifier	80	80	4C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
			RME PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	
10A	15	450	EL-344	AF44J	UP6CJ47	FP390	■ Filter
B	10	450					"
C	15	450					"
11	20	25	TA-25	PRS450-10	BR252A	TC26	▲ Output Cath. Bypass
12	20	25	TA-25	PRS25-25	BR252A	TC26	1st AF Cath. Bypass
13	1	200	TC-10	484-1	DT4W1	TP422	AVC Diode Filter
14	1	400	TC-10	484-1	DT4W1	TP422	RF Bypass Pwr. Supp.
15	.01	600	TC-11	684-01	DT6S1	TP410	Tone Compensation
16	.1	600	TC-11	684-01	DT6S1	TP418	Audio Coupling
17	.01	600	TC-11	684-01	DT6S1	TP410	1st AF Screen Bypass
18	.1	600	TC-11	684-01	DT6S1	TP418	Audio Coupling
19	.01	600	TC-11	684-01	DT6S1	TP410	AVC Filter
20	.01	600	TC-11	684-01	DT6S1	TP410	BFO Plate Decoupling
21	.01	600	TC-11	684-01	DT6S1	TP410	2nd IF Plate Decoup.
22	.01	600	TC-11	684-01	DT6S1	TP410	2nd IF Screen Bypass
23	.01	600	TC-11	684-01	DT6S1	TP410	2nd IF Cath. Bypass
24	.01	600	TC-11	684-01	DT6S1	TP410	AVC Filter
25	.01	600	TC-11	684-01	DT6S1	TP410	1st IF Plate Decoup.
26	.01	600	TC-11	684-01	DT6S1	TP410	1st IF Screen Bypass
27	.01	600	TC-11	684-01	DT6S1	TP410	1st IF Cath. Bypass *
28	.01	600	TC-11	684-01	DT6S1	TP410	AVC Filter
29	.01	600	TC-11	684-01	DT6S1	TP410	Conv. Plate Decoup.
30	.01	600	TC-11	684-01	DT6S1	TP410	Conv. Cath. Bypass
31	.01	600	TC-11	684-01	DT6S1	TP410	Conv. Screen Bypass
32	.01	600	TC-11	684-01	DT6S1	TP410	RF Plate Decoupling
33	.01	600	TC-11	684-01	DT6S1	TP410	RF Screen Bypass
34	.1	600	TC-11	684-01	DT6S1	TP418	AVC Filter
35	.01	600	TC-11	684-01	DT6S1	TP410	Osc. Bypass
36	.01	600	TC-11	684-01	DT6S1	TP410	RF Cath. Bypass
37	.01	600	TC-11	684-01	DT6S1	TP410	AVC Filter *
38	250	500	1FM-325	1468-00025	5W5T25	MC240	IF Bypass Vol. Cont.
39	100	500	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Diode
40	100	500	1FM-31	1468-0001	5W5T1	MC235	BFO Coupling
41	100	500	1FM-31	1468-0001	5W5T1	MC235	"
42	50	500	MS-45	1469-00005	5R5Q5	MCB225	Fixed Trimmer
43	50	500	MS-45	1469-00005	5R5Q5	MCB225	Fixed Trimmer
44	100	500	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor
45	500	500					Fixed Padder
46	500	500					"
47	1300	500					"
48	1700	500					"
49	3900	500					"
127	250	500	1FM-325	1468-00025	5W5T25	MC240	Tone Compensation *

*Not used in all models.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA				INSTALLATION NOTES
			RME PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
50A	1 Meg.	1		MR53	DL3-137	M-83-Z	Tone Control
B	Shaft Switch			Not Req. M26	A 41	Not Req. SW-A	Attach to 50A per instructions
51A	30KΩ	1					RF Gain Control & AVC Switch
B	Shaft Switch						
52A	250KΩ	1		UM149	D11-130	M-55-S	Audio Gain Control
B	Shaft Switch			Not Req. C200P	A W-200	Not Req. 43-200	Attach to 52A per instructions
53	200Ω	1					Meter Adj. Control

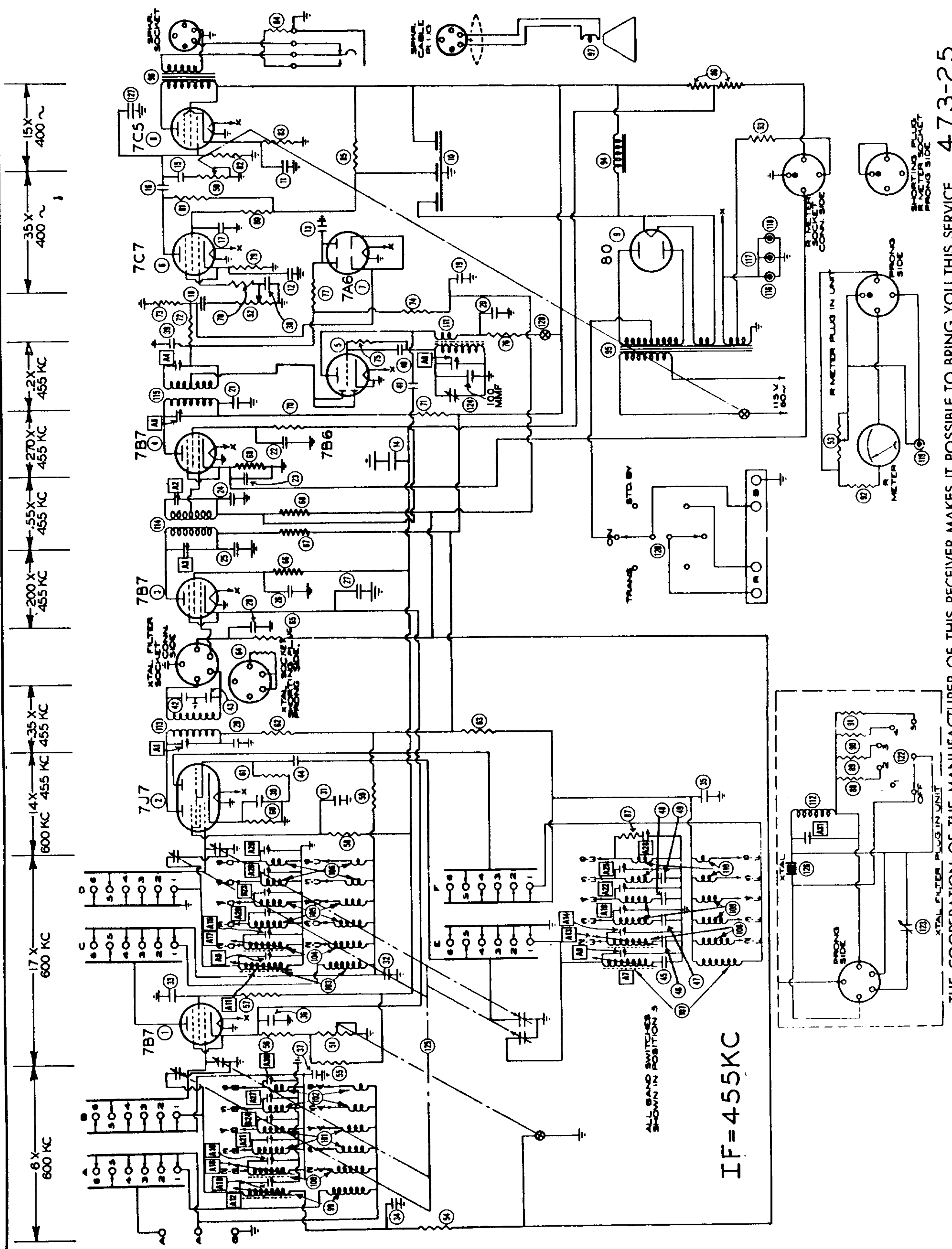
RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
			RME PART No.	IRC PART No.	
54	100KΩ	1/3		BTS-100K	Br.-Blk.-Blue AVC Network
55	50KΩ	1		BTA-47K	Grn.-Blk.-Or. Bleeder
56	150Ω	1/3		BW-2-150	Br.-Grn.-Br. RF Cathode
57	2200Ω	1/3		BTS-2200	Red-Grn.-Red RF Screen Dropping
58	2000Ω	1/3		BTS-2200	Red-Blk.-Red Mixer Screen Dropping
59	2200Ω	1/3		BTS-2200	Red-Red-Red RF Plate Decoupling
60	300Ω	1/3		BW-2-270	Or.-Blk.-Br. Converter Cathode
61	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Oscillator Grid
62	2000Ω	1/3		BTS-2200	Red-Blk.-Red Mixer Plate Decoupling
63	2000Ω	1/3		BTS-2200	Red-Blk.-Red Oscillator Plate Decoupling-See Note 1
64	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. 1st IF Grid -See Note 2
65	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. AVC Network
66	2200Ω	1/3		BTS-2200	Red-Red-Red 1st IF Screen Dropping
67	2200Ω	1/3		BTS-2200	Red-Red-Red 1st IF Plate Decoupling
68	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. AVC Network
69	300Ω	1/3		BW-2-270	Or.-Blk.-Br. 2nd IF Cathode
70	2200Ω	1/3		BTS-2200	Red-Red-Red 2nd IF Screen Dropping
71	2200Ω	1/3		BTS-2200	Red-Red-Red 2nd IF Plate Decoupling
72	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Diode Load
73	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Diode Load
74	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
75	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. BFO Grid
76	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. BFO Plate Decoupling
77	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. Noise Limiter Network
78	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Tone Compensation
79	1000Ω	1/3		BTS-1000	Br.-Blk.-Red AF Cathode
80	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AF Screen Dropping
81	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. AF Plate Load
82	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. Output Grid
83	240Ω	1		BW-1-220	Red-Yl.-Br. Output Cathode
84	35Ω	1/3		BW-1-33	Or.-Grn.-Blk. Headphone Shunt
85	20KΩ	1/3		BTS-22K	Red-Blk.-Or. Decoupling
86A	5500Ω	10		ABA-10,000	Voltage Dropping-See Note 3
B	4500Ω	1/3			Bleeder
87	18Ω	1/3		BW-2-18	Br.-Gray-Blk. Parasitic Suppressor-See Note 1
88	250KΩ	1/3		BTS-270K	Red-Grn.-Yl. Crystal Filter Network
89	100KΩ	1/3		BTS-100K	Br.-Blk.-Yl. Crystal Filter Network
90	50KΩ	1/3		BTS-47K	Grn.-Blk.-Or. Crystal Filter Network
91	20KΩ	1/3		BTS-22K	Red-Blk.-Or. Crystal Filter Network
92	1500Ω	1/3		BTS-1500	Br.-Grn.-Red Series "S" Meter
93	18Ω	1/3		BW-2-18	Br.-Gray-Blk. Series Meter Pilot Light-See Note 1

Note 1 - Not used in all models.

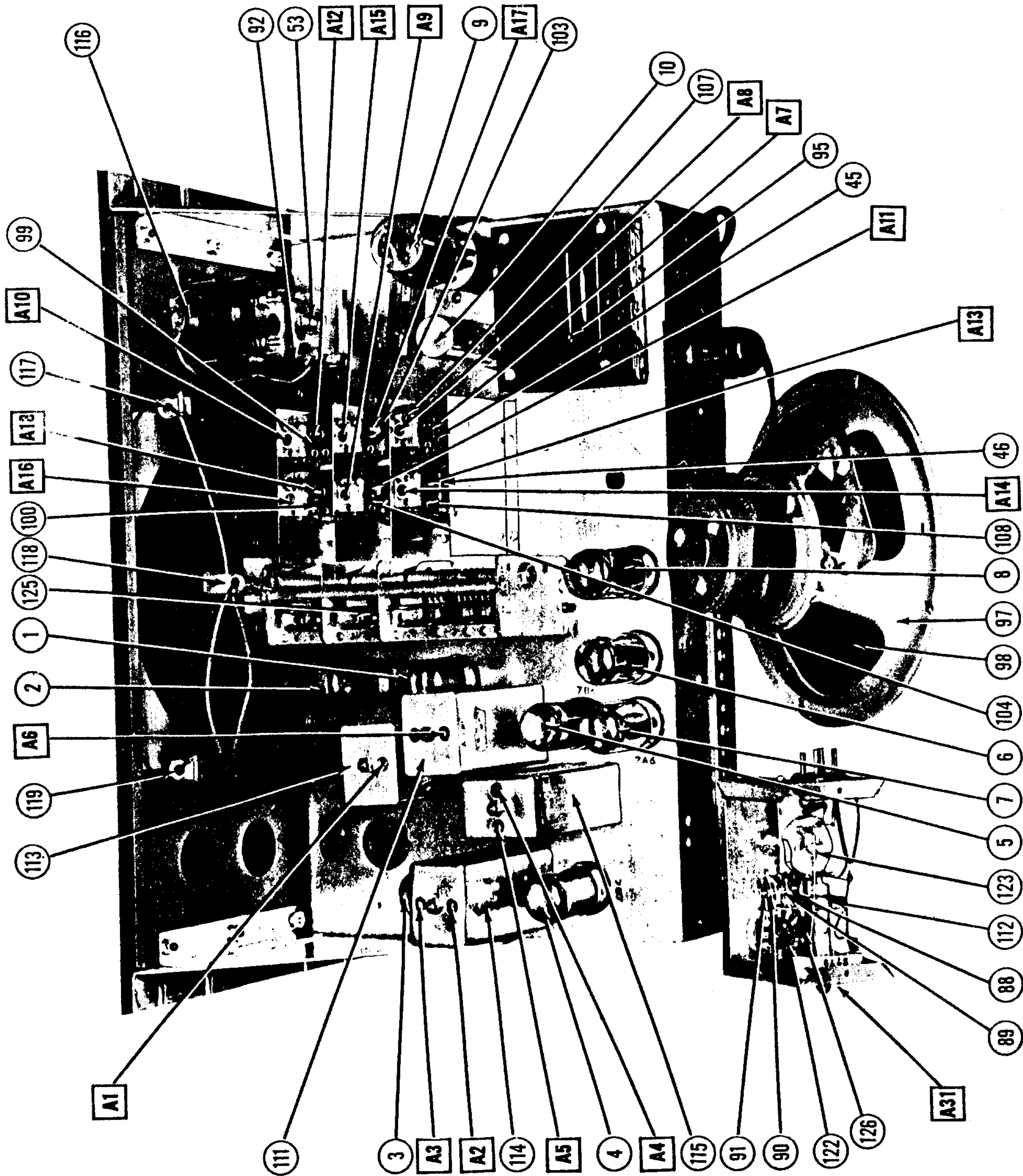
Note 2 - Not used in models having crystal filter unit.

Note 3 - On IRC replacement set slider 4500Ω from one end.

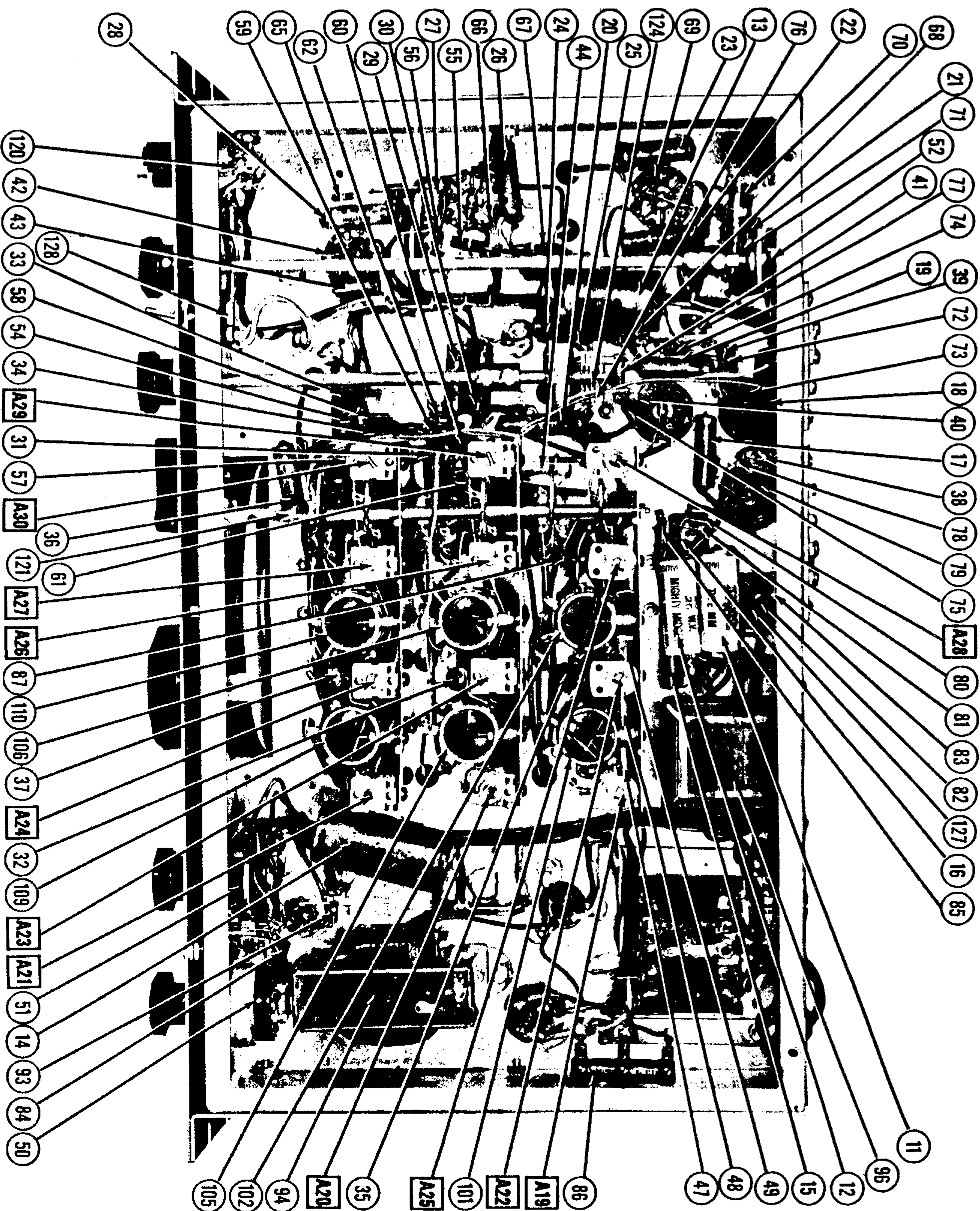


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 473-25

CHV2212—TOP VIEW



CHASSIS—BOTTOM VIEW



CONTROLS SET AS FOLLOWS:
 LINE-TONE CONTROL MAXIMUM CLOCKWISE
 RF GAIN ON AVC
 BAND SELECTOR AT #1
 BFO OFF EXCEPT FOR 7B6 READINGS
 AUDIO GAIN AT MAXIMUM

VOLTAGE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	7B7	0V.	290V.DC	115V.DC	3V.DC	0V.	-1V.DC	3V.DC	6.5V.AC
2	7J7	0V.	308V.DC	195V.DC	-3V.DC	115V.DC	0V.	3.1V.DC	6.5V.AC
3	7B7	0V.	290V.DC	115V.DC	3V.DC	0V.	-1V.DC	3V.DC	6.5V.AC
4	7B7	0V.	295V.DC	115V.DC	2.5V.DC	0V.	-1V.DC	2.5V.DC	6.5V.AC
5	7B6	0V.	140V.DC	-4.5V.DC	0V.	-5V.DC	-5V.DC	0V.	6.5V.AC
6	7C7	0V.	180V.DC	60V.DC	1.5V.DC	0V.	0V.	1.5V.DC	6.5V.AC
7	7A6	0V.	-2V.DC	-55V.DC	0V.	0V.	-55V.DC	-2V.DC	6.5V.AC
8	7C5	0V.	300V.DC	308V.DC	0V.	0V.	0V.	15V.DC	6.5V.AC
9	80	338V.DC	335V.AC	335V.AC	338V.DC				

RESISTANCE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	7B7	0 Ω	11.5 K Ω	6.4 K Ω	140 Ω	0 Ω	1 MEG.	140 Ω	.2 Ω
2	7J7	0 Ω	11.5 K Ω	27 K Ω	51 K Ω	5.5 K Ω	2.8 Ω	250 Ω	.2 Ω
3	7B7	0 Ω	11.5 K Ω	6.4 K Ω	140 Ω	0 Ω	1 MEG.	140 Ω	.2 Ω
4	7B7	0 Ω	11.5 K Ω	6.4 K Ω	210 Ω	0 Ω	1 MEG.	210 Ω	.2 Ω
5	7B6	0 Ω	225 K Ω	90 K Ω	0 Ω	103 K Ω	103 K Ω	0 Ω	.2 Ω
6	7C7	0 Ω	103 K Ω	850 K Ω	900 Ω	0 Ω	280 K Ω	900 Ω	.2 Ω
7	7A6	0 Ω	53 K Ω	350 K Ω	INF.	0 Ω	350 K Ω	53 K Ω	.2 Ω
8	7C5	0 Ω	9.5 K Ω	9.1 K Ω	INF.	0 Ω	240 K Ω	225 Ω	.2 Ω
9	80	9.5 K Ω	103 Ω	95 Ω	9.5 K Ω				

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY
 ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC VOLTAGE MEASUREMENTS ARE AT 20,000 OHMS PER VOLT; AC VOLTAGES MEASURED AT 1,000 OHMS PER VOLT.
2. SOCKET CONNECTIONS ARE SHOWN AS BOTTOM VIEWS.
3. MEASURED VALUES ARE FROM SOCKET PIN TO COMMON NEGATIVE.
4. LINE VOLTAGE MAINTAINED AT 117 VOLTS FOR VOLTAGE READINGS.
5. NOMINAL TOLERANCE ON COMPONENT VALUES MAKES POSSIBLE A VARIATION OF $\pm 10\%$ IN VOLTAGE AND RESISTANCE READINGS.
6. VOLUME CONTROL AT MAXIMUM, NO SIGNAL APPLIED FOR VOLTAGE MEASUREMENTS.

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA		INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE 10 CURRENT 1000W	THORDARSON PART NO.	
94	.116A	220Ω	12 Henr-100	T20C54 ‡	‡ Drill one new mounting hole.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA		INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	STANCOR PART No.	THORDAR'N PART No.
95	117V AC 670V CT @ 1.53A	5.3V AC @ 1.8A	6.5V AC @ 2.2A		P-6013	T22R06

TRANSFORMER (OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA		INSTALLATION NOTES
	IMPEDANCE	DC RES.	RTE PART No.	THORDAR'N PART No.	
96	3400Ω 4Ω	170Ω .4Ω	A-3825 ‡	T22S60 ‡	‡ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA		INSTALLATION NOTES
		RTE PART No.	JENSEN PART No.	
97	FIELD VC IMP. 4Ω		ST-117 Mod. P8-T	
98	CONE DIA. VC DIA. 7-3/4"		NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT	

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	RTE PART No.	MEISSNER PART No.
99	Ant. Coil #1	1.5Ω	3.2Ω		
100	" #2	.5Ω	1.5Ω		
101A	" #3	0Ω	.2Ω		
102A	" #4	0Ω	0Ω		
102A	" #5	0Ω	0Ω		
102A	" #6	0Ω	0Ω		
103	RF Coil #1	1.5Ω	3.5Ω		
104	" #2	.5Ω	1.5Ω		
105A	" #3	.2Ω	.2Ω		
105A	" #4	0Ω	0Ω		
106A	" #5	0Ω	0Ω		
106A	" #6	0Ω	0Ω		
107	Osc. Coil #1	.5Ω	2.3Ω		
108	" #2	.5Ω	1.5Ω		
109A	" #3	0Ω	.2Ω		
109A	" #4	0Ω	.1Ω		
110A	" #5	0Ω	0Ω		
110A	" #6	0Ω	0Ω		
111	BFO	1Ω	3Ω		
112	XTAL Filter				
113	Input IF	3Ω	6Ω		
114	Inter. IF	7.8Ω	4.5Ω		
115	Output IF	3Ω	7.8Ω		

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					RTE PART No.		
116	Screw	6-8	0.25	Blue			Type 46
117	Bayonet	6-8	0.15	Brown			Type 47
118	Bayonet	6-8	0.15	Brown			Type 47
119	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	RTE PART No.	NOTES
120	Switch		Stand-by, 3 Position, 2 Pole
121	Bandswitch		
122	Switch		
123	Var. Capacitor		XTAL Selectivity, 5 Pos., 1 Pole
124	Var. Capacitor		XTAL Phasing
125	4 Gang Var. Cap		BFO
126	Crystal		
128	Switch		BFO, SPST

DISASSEMBLY INSTRUCTIONS

FOR ALIGNMENT ONLY

1. For alignment remove six Phillips head screws from bottom of cabinet and remove bottom plate.

COMPLETE DISASSEMBLY

2. Remove two self-tapping screws from bottom of cabinet.
3. Remove eight machine screws and panel strips from front of cabinet and two Phillips head screws.
4. Slide chassis from cabinet.
5. Remove five hex nuts from bottom of chassis.
6. Remove bottom chassis cover.
7. Remove two nuts and two self-tapping screws from coil shield on top of chassis, remove shield.

REMOVAL OF CRYSTAL COMPARTMENT

8. Remove XTAL knobs from front of chassis. Remove four Phillips head screws from XTAL name plate and remove plate.
9. Remove two self-tapping screws from XTAL compartment on top of chassis. Unplug XTAL compartment from socket on chassis.
10. Remove eight self-tapping screws from shield on XTAL compartment.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
Use "R" meter on receiver for output indication when aligning. B.O. switch, crystal selectivity switch should be off, trans.-std. by-on switch should be on, and RF gain fully clockwise. Output of signal generator no higher than necessary to obtain output reading. Audio gain should be sufficiently clockwise to enable monitoring of signal. Use insulated alignment screw-driver for adjusting.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to sta- tor of center section of vari- able. Low side to chassis.	455KC	1	Variable fully closed	See pro- alignment instruc- tions.	A1, A2, A3, A4, A5.	Adjust for maximum read- ing.
Turn crystal selectivity switch to position 5. Tune signal generator for peak on "R" meter. This will be approximately 455KC. The signal generator is now accurately tuned to the crystal frequency. Turn the crystal selectivity switch to "off" and repeat last step making certain that the setting of the signal generator remains unchanged.							
.1 MFD.	High side to sta- tor of center section of vari- able. Low side to chassis.	455KC	1	Variable fully closed	See pre- alignment instruc- tions.	A6	Turn B.O. switch on and set pitch control verti- cal. Adjust A6 for zero beat.
200Ω	High side to ant. terminal. Low side to chassis.	600KC	"	600KC	"	A7	Adjust for maximum read- ing.
200Ω	"	1400KC	"	1400KC	"	A8	Adjust for maximum read- ing. Repeat last two steps until no further improvement can be made.
200Ω	"	"	"	"	"	A9, A10	Adjust for maximum read- ing.
200Ω	"	600KC	"	600KC	"	A11, A12	Adjust for maximum read- ing. Repeat last two steps until no further improvement can be made.
200Ω	"	1800KC	2	1800KC	"	A13	Adjust for maximum read- ing.
200Ω	"	2800KC	"	2800KC	"	A14	Adjust for maximum read- ing. Repeat last two steps until no further improvement can be made.
200Ω	"	"	"	"	"	A15, A16	Adjust for maximum read- ing.
200Ω	"	1800KC	"	1800KC	"	A17, A18	Adjust for maximum read- ing. Repeat last two steps until no further improvement can be made.
200Ω	"	5MC	3	5MC	"	A19	Adjust for maximum read- ing.
200Ω	"	5MC	"	5MC	"	A20, A21	"
200Ω	"	9MC	4	9MC	"	A22	"
200Ω	"	"	"	"	"	A23, A24	"
200Ω	"	16MC	5	16MC	"	A25	"
200Ω	"	"	"	"	"	A26, A27	"
200Ω	"	30MC	6	30MC	"	A28	"
200Ω	"	"	"	"	"	A29, A30	"
Tune in a broadcast station playing music. Turn crystal selectivity switch to position 5 and tune in station accurately. Adjust crystal phasing control for minimum background noise. Turn selectivity control to position "1". Adjust A31 for most natural reproduction of music.							

ANTENNA

The terminals on the rear apron marked "A-A-G" are for the antenna connection. When the receiver leaves the factory there is a jumper between one of the "A" posts and the "G" post. Good results may be obtained by connecting a wire 50 to 75 feet long to the other "A" post. If a 2 wire feeder system is used the jumper is removed and the two feeders are connected to "A" and "A". A ground may be connected to the "G" post if it improves reception.

RELAY AND BREAK-IN TERMINALS

On the rear apron are two sets of contacts marked "R" and "B". The pair marked "B" are in series with the plate supply. This pair must always be shorted when the receiver is being used, either by a relay or by a jumper if a remote control feature is not used. This jumper is in place when the set leaves the factory.

The pair marked "R" are relay control terminals. This pair is shorted when the receiver stand-by switch is turned to "Trans". It may be used to control an external relay in conjunction with a suitable external voltage.